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Case 2

Seed Treater

Claims

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1. A self-contained seed treater comprising,
a drum having a surrounding wall and a top opening and a
bottom opening,
a rotatable shaft mounted in the drum on a vertical axis,
a spreader mounted on the shaft adjacent the top of the
drum, and adapted to receive seed flowing downwardly through the
top opening, and operable for throwing the seed outwardly into
engagement with the surrounding wall,
an upper bowl below the spreader, and tapering downwardly
and having a bottom opening, and being otherwise imperforate and
secured to the surrounding wall without space between itself and
the surrounding wall,
whereby all the seed on the surrounding wall thrown from
the spreader will flow into the upper bowl.

15 the construction of the seed treater being such as to
enable the seed in the upper bowl to flow through the bottom
opening in the upper bowl and through the bottom opening of the
seed treater into a receptacle, and
the seed treater including power means for rotating the
20 shaft surface.

2. A seed treater according to claim 1 wherein,

the drum has a top cover in which the top opening is
formed, and

the drum includes a flange unit on the top cover having a
central opening co-axial with the top opening of the drum and a
flange element spaced axially from the top cover and extending
transversely of the axis, for detachably securing it to an
overhead supporting structure.

3. A seed treater according to claim 1 and including,

upper and lower first bearing means for supporting the
shaft,

second means supporting the bearing means within the drum,

5 and

the second supporting means being operable for detachably mounting the second supporting means on the surrounding wall.

4. A seed treater according to claim 1, wherein,

the drum is cylindrical and the supporting means includes an upper protected bearing support between the spreader and the upper bowl,

5 the upper bearing support extends diametrically across the drum and includes spaced apart side bars positioned vertically on edge, and having end (plated) also positioned on edge by which the upper bearing support is detachably secured to the surrounding wall,

10 the upper bearing support also including a central horizontal plate secured to the side bars, and

the upper bearing means is detachably and fixedly mounted on the plate,

15 whereby relatively great space is provided outwardly of the side bars, and between the side bars radially outwardly beyond the central horizontal plate to enable the seed to flow freely downwardly through the drum.

5. A seed treater according to Claim 4 wherein,

the upper bearing support includes holes in its structures for receiving the outlet ends of the fluid flow hoses from the exterior leading to a position adjacent the shaft for conducting
5 fluid into the drum to a position adjacent the shaft.

6. A seed treater according to claim 1 and including a rotary applicator between the spreader and the upper bowl,

the applicator is mounted on the shaft and rotatable therewith and positioned for receiving fluid from the terminal ends of the fluid flow hoses, and operable for throwing fluid that is placed thereon outwardly into engagement with the falling seed kernels on the wall of the drum.

7. A seed treater according to claim 5 and including

a rotary applicator mounted on the shaft and rotatable therewith, and

the rotary applicator is positioned between the upper
5 bearing support and the upper bowl, and thereby positioned below the fluid line outlets for receiving thereon fluid introduced into the drum.

8. A seed treater according to claim 7 wherein,

each the spreader, applicator, and coaters, includes a bottom plate extending substantially its full area, and vertical blades extending upwardly from bottom plate.

9. A seed treater according to claim 1 and including,

an upper rotary coater below the upper bowl and secured to the shaft, and positioned for receiving seed and fluid from the upper bowl and operable for throwing seed and fluid outwardly against the wall of the drum.

10. A seed treater according to claim 9 and including,

a center bowl substantially identical with the upper bowl below the upper coater, and mounted in the drum similarly to the upper bowl.

11. A seed treater according to claim 10 and including,

a lower rotary coater substantially identical with the upper rotary coater and mounted below the lower bowl and mounted similarly to the upper rotary coater.

12. A seed treater according to claim 11 and including,

a hogback adjacent to the lower end of the drum and below
all of the above instrumentalities and structures,

the hogback being constituted by a rigid elongated piece
5 extending diametrically across the drum and secured at its ends
to the surrounding wall, and

lower bearing means mounted on and under the hogback and
supporting the shaft.

13. A seed treater according to claim 12 and including,

power means mounted on the exterior of the drum, and

power transmitting means operably connecting the power
means and the shaft and extending into the drum and underlying
5 the hog back throughout its extent to the shaft and thereby
shielded by the hogback from grain falling through the drum.

14. A seed treater according to claim 1 wherein,

the drum includes a bottom closure element of downwardly
directed cone shape, forming a bottom bowl, secured to the
surrounding wall,

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5 the bottom bowl includes the bottom opening positioned coaxially with the drum, and surrounding imperforate element positioned for receiving the grain falling through the drum.

15. A seed treater according to claim 1 and including,
in addition to the upper bowl,
a central bowl and a bottom bowl,
all concentric with the axis and through all of which the
seed mixture flows, and

the seed treater includes rotary wipers secured to the shaft and extending into the respective bowls, and operable in response to rotation of the shaft, for wiping the floor of the bowls.

16. Apparatus for treating seed, compromising,

a cylindrical drum having top and bottom openings,
the drum including means for mounting it on and below a floor in a building, and adapted to receive grains of different
5 characteristics through the top opening, for mixing grains,

the drum including means therewithin for mixing the grains in response to the fall of the grains through the drum, and

the apparatus including power means mounted on the drum for operating the mixing means.

17. Apparatus according to claim 16 and including,

conduit means leading from the exterior into the interior of the drum for conducting liquid chemicals into the drum for mixing with the grains in the drum.

18. A method of treating seeds, adapted for use in an elevator which includes a building with an elevated floor having a supply opening therethrough and a space below the floor for accommodating vehicles for receiving the seeds, comprising,

providing seeds to be mixed on the elevated floor,

providing a self-contained mixing unit having a top opening and a bottom opening for flow of seeds therethrough and through the mixing unit, and mixing the seeds as the seeds flow through the mixing unit.

19. A method according to Claim 18 and including the step,

introducing fluid into the mixing unit with the introduction of the seeds, and mixing the seeds and fluid.

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20. A method according to Claim 19 for use in such elevator that includes a driveway in said space in the building for movement of vehicles on the driveway, and including the step,

introducing mixed grain from the mixing unit on the
5 driveway and moving the vehicle from the building.

End of Claims

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